

A commonly overlooked or difficult part of a vintage automobile to restore is the instrument cluster. Some vehicles have aftermarket support, and some do not. In many cases, particularly in restomods, the cluster gets replaced entirely with aftermarket round gauges. But, if you want to keep it looking original with an as-new finish to match the rest of your restoration work, then this quick read will shed some light on how 12VC can help.

Clusters that have a clear face can be recreated. I will show you how I went about the process on a 1956 Buick Special. This car was highly modified and I will point out the details where things in the cluster were changed. The process would be the same for a completely original appearance, but this particular project is a good example of the other things that 12VC can do. This cluster was converted to electronic gauges in the process. The ammeter was converted to a voltmeter. The mechanical temperature and oil pressure gauges were converted to electronic stepper motors. The speedometer mechanicals remained original, but were run by an electronic speed sensor-to-cable output controller.



An original 1956 Buick cluster. Notice the stress cracks and foggy areas throughout.

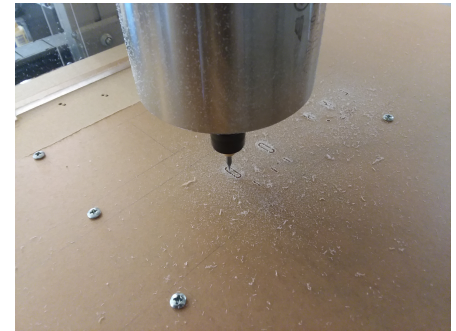


Creating the CAD design with measurements from the original worn out gauge face.

The process starts with creating the design in a CAD program. This is a mix of manual measurements, creative drawing, and a few other tricks I have come up with in my 25 years of CAD experience. The text is drawn to match the original. This is not like typing out a word on your computer. It is created.

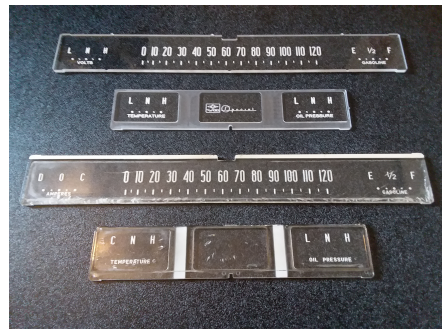
Once the design work is done, the information to move onto the next step is now entered into a CAM program where tool paths are created to mill this design into a special light guiding plastic. The parts were then milled using a CNC machine.

In some cases a laser can be used to perform some of the work. In this case, rotary milling with a variety of bits was the process of choice because large areas with elevation change were needed to fit the cluster housing.



The delicate process of machining the gauge face in a mirror image. The work surface must be dead flat in order to get a quality optical appearance.

After the machining process is completed, the parts are then cleaned and inspected. The text and all markings are painted by hand with a special reflective paint. Lastly, a polishing process is performed, and the new cluster face is ready to install.



The new modified version in comparison with the original worn out and stress cracked gauge faces.

Some other things to note when modifying a cluster is during the assembly process, gauges must be installed and calibrated so the needle sweeps correctly. This cluster retained the original lighting. The new face looked very nice when lit up, and the clarity during the day really brought out the 50's style. The electronic gauges were a cinch to wire to the Cadillac Northstar V8 engine that was installed.

If you are looking to have restoration or modifications done to your cluster, feel free to email info@12voltconnection.com. Send a picture of your cluster and give a description of the type of work you are looking for.



The assembled cluster shell with subtle changes while retaining the original look. The new sheen and clarity will draw your attention.



Completed cluster installed in the dashboard of a 1956 Buick Special.



The clock, which was seized up for decades, was also restored and got a new face using the same process.